UNIVERSITY OF CALIFORNIA,
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Bilingual Family Literacy Practices

DISSERTATION

submitted in partial satisfaction of the requirements for the degree of

DOCTOR OF PHILOSOPHY

in Education

by

Tien Thuy Ho

Dissertation Committee:
Associate Professor Penelope Collins, Chair
Professor Elizabeth D. Peña
Distinguished Professor George Farkas

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DEDICATION

For my students:
No work has brought me joy like teaching, and so I dedicate this dissertation to my students. Their trust in me never wavered and inspires me to imagine a brighter future. In all the moments when I feared that I would not be able to complete this final educational milestone, I thought about my students and how I wanted to complete this dissertation for them.

For my parents:
Con cám ơn ba mẹ đã hy sinh một nửa cuộc đời cho con và hai em. Nhờ có ba mẹ, con có thể thực hiện ước mơ trở thành một học giả. Bài luận văn này là về những gia đình song ngữ như gia đình của mình. Mặc dù hầu hết các gia đình đang sống trong nghèo khổ, họ giàu lòng ham học đọc viết và có khá vọng sống lớn lao. Hành trình học vấn của con đầy thử thách, nhưng tinh thương của ba mẹ đã thúc đẩy con cho đến khi hoàn thành. Con sẽ sử dụng trí thức của mình để giúp các em khác thực hiện ước mơ học vấn. Một lần nữa, con cám ơn ba mẹ rất nhiều.

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CURRICULUM VITAE

TIEN THUY HO

EDUCATION

University of California, Irvine 2019
Doctor of Philosophy in Education
Specialization in Language, Literacy, & Technology
University of California, Riverside 2014
Master of Arts in Education, Society, & Culture
University of California, Los Angeles 2012
Bachelor of Arts in English & Economics

PROFESSIONAL EXPERIENCE

***School Manager*.** Yamaha Music Academy. Fountain Valley, CA 2012-2014
Teacher. A+ Tutoring Center. Westminster, CA 2008-2018
Masters Teaching Assistant. Department of Women's Studies. UC Riverside 2013
Doctoral Teaching Assistant. School of Education. UC Irvine 2014-2018
***Doctoral Researcher*.** School of Education. UC Irvine 2017-2019
Instructor. Golden West College Writing Center. Huntington Beach, CA 2019
Part-Time Faculty. California State University, Fullerton. Fullerton, CA 2019

AWARDS

Division of Teaching Excellence & Innovation. UC Irvine 2016-2018
Pedagogical Fellow of School of Education

CERTIFICATIONS

Certificate in Teaching Excellence
UCI Graduate Division Mentoring Excellence
Center for Integration of Research, Teaching, & Learning Associate Level

MANUSCRIPTS

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ABSTRACT OF THE DISSERTATION

Bilingual Family Literacy Practices

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Tien Thuy Ho

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Associate Professor Penelope Collins, Chair

Bilingual children represent the fastest growing student population in US public schools. Thus, the goal of this dissertation is to develop a rich understanding of bilingual children and families and their home experiences before entering kindergarten. It seeks to understand the connection between family literacy practices and bilingual children's early skills (oral language, literacy, and numeracy). Four major foci are considered: (1) background characteristics of bilingual families, (2) family literacy practices, (3) parental aspirations of children's educational attainment and parental expectations of children's skills at kindergarten entry, and (4) their unique contributions to early skills. Findings show that while bilingual children and families were disproportionately low-SES, they frequently engaged in family literacy practices, and parents exhibited high expectations for their children's educational attainment and skills. Family literacy practices were important for children's early skills development. Parental expectations mattered to a smaller extent compared to literacy practices. These findings are important for educators, researchers, and policymakers whose work centers on better understanding and supporting bilingual students and by extension their families to navigate the US school system.

Chapter 1: Introduction

Around the world, bilingualism, the capability to understand more than one language, is a common life experience that is shared by more than half the world's population (Bialystok, Craik & Luk, 2012). Research has demonstrated that bilinguals vary widely in their linguistic competencies and identities in their languages with few having native-like proficiency in both (Paradowski & Bator, 2018). For instance, a distinction among bilinguals is whether they are also biliterate or have the capability to not only speak multiple languages but also read and write in multiple languages. Increasingly, the view that bilingualism reflects two monolinguals in one individual is becoming obsolete as the movement to recognize that bilinguals develop communicative competencies in their different languages according to their circumstances is gaining momentum (Paradowski & Bator, 2018).

However, one prevailing misconception regarding bilingualism and biliteracy is that childhood bilingualism may cause linguistic confusion and impede children's linguistic and cognitive development (Paradowski & Bator, 2018). This has conjured vast implications for bilingual children in spaces most paramount to their development – in their homes and at schools. Some parents express hesitation in speaking their home languages with their children for fear that this would hinder their children's development in the dominant language (Kang, 2015; Lee, Shetgiri, Barina, Tillitski, & Flores, 2015). Many educators opt for curriculum that subtracts the home language while emphasizing only the dominant language (Flores, 2016). Nonetheless, most children learn to read in multiple languages either simultaneously as in Hong Kong or across their schooling as in India (McBride, 2016; Shenoy & Wagner, 2019). Further, approximately half of all children across the globe first learn to read in a second language (McBride, 2016).

Bilingualism in the US

An important caveat in understanding language and literacy development is that much of the empirical research is based on research in English and other Western European languages even though across the world children learn to read and write in languages that are not alphabetic (Daniels & Share, 2019). Within the context of the United States in which there is only one official language, English, bilingualism is further complicated. For example, because fluency in English carries power and prestige, bilinguals whose home languages are not English or bilinguals who are learning to speak English face stigmas in dominant English-speaking spaces such as schools. This is problematic because for many students, schools play an important role in shaping and transforming bilingual students as the curriculum shapes the language, literacy, and content-based competencies students acquire in both languages. Indeed, bilingual children make up the fastest growing student population in the US, constituting 9 percent of public school students, and 79 percent of them speak Spanish at home (National Center for Education Statistics, 2014).

The acquisition of two languages occurs in a couple of ways. On the one hand, majority language speakers are those whose home language is the dominant language, English and are learning an additional language for various reasons. On the other hand, minority language speakers (LM) are those whose home language is one other than the dominant language. There are tremendous variations, likely a reflection of socioeconomic status, among LM students with respect to the exposure to two languages, proficiency in both languages, and education in both languages. Studies often refer to LM students as dual-language learners (DLL) or English language learners (ELL). Dual-language learners are students who are learning both their home language and the dominant language simultaneously while English language learners are

students who are learning English oftentimes at the expense of their home language (Flores, 2015). For the purposes of this dissertation, the term "bilingual" will refer to students who communicate in more than one language in order to embrace all levels of bilingualism.

Bilingualism and Early Academic Skills

In the literature situated within the US context, bilingualism is often treated as a risk factor for school entry (Hoff, 2013). Because in the US, bilingual status is confounded with low-socioeconomic status, bilingual status (often interpreted as being language minority) appears to be a risk factor, along with low-socioeconomic status (de Cohen, Deterding, & Chu Clewell, 2005; Kieffer, 2011; Lesaux, 2006; McLoyd, 1998). The supposed "school readiness gap" between low-income bilingual students and high-income monolingual English speaking students suggests that bilinguals are far less ready for school than their monolingual counterparts (Castro, Paez, Dickinon, & Frede, 2011; Hoff, 2011). For example, Mancilla-Martinez and Lesaux (2011) investigated early Spanish use in young bilingual children's homes. They noted that while schools were these bilingual children's first formal encounters with the English language, schools were not their first exposure to language. They concluded that Spanish use in the homes does not interfere with the development of English vocabulary. However, despite their English instructional context, children's English vocabulary knowledge was below average and the difference compared with national norms persisted.

Researchers have attempted to isolate the socioeconomic status (SES) effect by restricting their samples to particular ends of the SES scale. Research with low-income young Latinx bilingual children found that they scored one to two standard deviations below their monolingual English speaking counterparts in receptive and expressive vocabulary and in auditory comprehension (Hammer, Lawrence, & Miccio, 2008; Paez, Tabors, & Lopez, 2007). In

a study of typically developing high-SES infant bilinguals, Hoff and colleagues (2012) found that infants who acquired two languages lagged behind those who acquired only one; however, it was "perfectly normal" for bilingual infants to lag behind monolingual infants in regard to the rate at which they acquired each language.

It remains unclear how much of the school readiness gap is a function of SES and how much is a function of bilingualism. While the effect of SES is strong, there is evidence that SES is not likely to fully account for the difference between bilinguals and monolinguals (Farkas & Hibel, 2008). Hence, looking at parenting practices and beliefs may shed light on relevant factors in predicting young bilingual children's early academic skills for formal school entry.

Home Literacy Experiences

The home literacy experiences of bilingual children and their families are examined in this dissertation. Essentially, home literacy encompasses parent and child practices in the home that inspire linguistic and cognitive development. These linguistic and cognitive development foster early academic skills that contribute to "school readiness." Early academic skills include oral language, literacy, and numeracy skills. The combination of these skills determines how ready a child is for school. Sometimes, home literacy experiences include not only home literacy practices but also parental expectations for children as well. Home literacy practices are the active parental involvement in children's development while parental expectations are the intentions towards instigating these practices. However, literacy practices and expectations are distinct constructs. In other words, they may or may not be associated with one another.

Home literacy has been found to provide important preparation for school entry (Sénéchal, & LeFevre, 2002). A caveat is that most of the research on home literacy has been conducted with students who are monolingual English speakers, whereby English is the medium

for both the home literacy practices and schooling, and particularly middle-class English speakers. Far less is known about the nature and contributions of home literacy practices for the school readiness of bilingual children. For instance, home literacy practices in bilingual homes would likely occur in many languages rather than in English.

Parental Expectations

Further, parental expectations may contribute to bilingual children's early academic skills. Parental expectations serve as an indicator of the family norms, values, and traditions associated with schooling that influence children's family life and home environments (Rimm-Kaufman, Pianta, Cox, & Bradley, 2003), making expectations an integral aspect of children's home environments. Studies have consistently found that parental beliefs about their children's educational futures predict student achievement (Davis-Kean & Sexton, 2009; Englund et al., 2004) across families from diverse racial and ethnic backgrounds (Hong & Ho, 2005; Yan & Lin, 2005).

Socioeconomic factors indirectly relate to children's academic skills through parents' beliefs and behaviors such as reading activities, playing activities, and showing warmth (Davis-Kean, 2005). The nature of this relationship has been found to differ between White and Black families. Davis-Kean showed that the indirect link of parents' education to their behaviors (home learning activities) is substantially related to parents' educational expectations for their children. Similarly, Joe and Davis (2009) found that parents' academic expectations and behaviors were associated with Black boys' cognitive achievement in kindergarten. When parents emphasized the importance of academic skills, their sons attained higher reading and math achievement (Joe & Davis, 2009). Kindergarten girls also attained higher reading and math scores when their parents had higher expectations for them (Galindo & Sheldon, 2012). Latinx children's

achievement through elementary school was not limited by their parents' educational expectations or aspirations (Goldenberg, Gallimore, Reese, & Garnier, 2001).

Family Perspective

While the literature has often suggested that bilingual students face difficulties that put them at risk for low academic achievement according to national norms (Hoff, 2013), they have a number of protective factors that may help them excel. This dissertation takes a family perspective to focus on the parent and child interactions that manifest in the homes of bilingual families (Senechal & LeFevre, 2002) through literacy practices (e.g. read books, tell stories, sing songs) and parental expectations. Research has shown that early academic skills that lead to school readiness originate and develop in the home (Hernandez, Denton, & Macartney, 2007); thus, parents make an important contribution to children's early academic skill development by creating a print-rich home environment, modeling literacy-related behaviors, and teaching them about letters and numbers (Farver, Xu, Eppe, & Lonigan, 2006; Senechal, 2006). Parental expectations include two categories: expectations of children's years of schooling and expectations for skills that children have at the start of kindergarten. This is a parenting pattern that been shown to be prevalent in monolingual-English speaking families but less explored in bilingual families (Burgess, Hecht, & Franze, 2005).

Responsive parenting practices matter for children's educational outcomes (Bodovski & Farkas, 2008; Bornstein, 2006; Castro, Exposito-Casas, Lopez-Martin, Lizasoain, Navarro-Asencio, & Gaviria, 2015; Duncan & Brooks-Gunn, 2000). Particularly, the ways that bilingual parents support their children are unique to their circumstances. For example, Latinx parents reported moving to the US so that their children can earn a quality education, have a strong economic future, grow up in a safer neighborhood, and reconnect with other family members

(Perreira, Chapman, Stein, 2006). These immigrant parents are displaying a bold and active role in fostering the well-being and success of their children. Further, the bonds of many immigrant families have also been found to facilitate the transmission of educational aspirations from parents to children (Goldenberg, Gallimore, Reese, & Garnier, 2001; Hao & Bonstead-Bruns, 1998; Li, 2006). So, while there are many challenges for bilingual students in the US, their parents' capacity to support their education is complex, warranting further research.

Finally, parents' beliefs about literacy informed their practices and preferences for bilingualism. For example, middle-class Chinese immigrant parents placed very high importance on their children's reading development in two languages, and so they worked with their children to read outside school and taught them to read through phonics (Li, 2006). Similarly, Mexican and Central American immigrant families described the process of learning to read with phonetics and taught their children early literacy skills this way (Reese & Gallimore, 2000). Some Vietnamese parents believed that developing their young children's literacy in Vietnamese would make subject matters more understandable in English; these parents opted for bilingual education regardless of their children's English proficiency (Maloof, Rubin, & Miller, 2006; Young & Tran, 1999). Developing children's bilingualism was also a goal for Chinese parents regardless of their own levels of Chinese competency or the availability of Chinese resources at home (Lao, 2004). Indeed the literature on parental expectations is mixed due to the wide variation in definitions and descriptions of parental expectations. This dissertation includes parental expectations in addition to family literacy practices.

Research Aims

What the literature has shown about the bilingual children's early language and literacy experiences that have implications for school entry is based on a deficit perspective.

This dissertation takes a crucial step in examining the bilingual family literacy practices and expectations in order to gain a more nuanced picture of what occurs in bilingual homes. There are four major research aims. (1) The first aim is to illustrate bilingual families and children characteristics, such as the socioeconomic factors. (2) The second aim is to examine the various home literacy practices that occur in bilingual homes. (3) The third aim is to examine the parental expectations of bilingual parents, including children's years of schooling and children's skills at kindergarten entry. (4) The final aim is to answer whether bilingual family literacy practices and expectations make unique contributions to bilingual children's early academic skills. Early skills are measured at the start and end of kindergarten.

Data Source

Data for this dissertation comes from the Early Childhood Longitudinal Study, Kindergarten Cohort 2010-2011 (ECLSK-2010). ECLSK-2010 is a federally funded study that followed a nationally representative sample of kindergarteners through their fifth-grade year. Further, an oversampling of Asian/Pacific Islander students enables researchers to make accurate estimates for these students as a group. Data were obtained in the fall and spring of each school year. Sources important to this dissertation included: interviews with parents and one-on-one assessments of the children. Interviews with parents reveal the home literacy practices that occur in their homes and their expectations of their children's years of schooling and skills for kindergarten entry. This dataset offers an overview of children's early academic skills including oral language, reading, and numeracy skills. Additionally, there are detailed demographic information such as a composite variable of SES, race/ethnicity, and whether families speak languages other than English at home. While the data is composed of approximately 18,000 kindergarteners from roughly 970 schools across the US, almost 20% are children who came

from homes where a language other than English was spoken. Indeed, ECLSK-2010 is optimal for this dissertation as it offers a nationally-representative snapshot into bilingual family literacy practices.

Significance

In addition to providing important practical and policy implications, this dissertation also challenges the notion that bilingual homes are linguistically and cognitively deficient. It is very likely that what occurs in bilingual homes is mismatched with what occurs in schools; thus, prior research has suggested "achievement gaps", "opportunity gaps", and "school readiness gaps" between bilingual and monolingual students. Initial findings offer researchers, educators, and policymakers a current national overview of the bilingual family literacy practices and parental expectations of bilingual children entering US schools. Further, these elements uniquely contribute to bilingual children's school readiness. In disentangling SES and various family literacy practices and expectations, educators may better understand the backgrounds of their bilingual students. Finally, this dissertation offers insight into the potential value of involving parents in curriculum that focuses on bridging with occurs at home with school.

Chapter 2: Literature Review

Bilingual Students in the US

The landscape of US public schools is rapidly changing — in fall 2000, bilingual students comprised of 3.8 million (8.1%) and increased to 4.9 million (9.6%) of school enrollment by fall 2016. This 20 percent increase in the bilingual student population signifies the fastest growing student population (Francis, Rivera, Lesaux, & Rivera, 2006). While bilingual students live all across the US, most reside in the following nine states: Alaska, California, Colorado, Florida, Kansas, Nevada, New Mexico, Texas, and Washington. Of these nine states, California reported the highest percentage of bilingual students at 20.2 percent. Almost 400 different languages are spoken by bilingual students (U.S. Census Bureau, 2011), with Spanish being the most commonly reported home language (National Center for Education Statistics [NCES], 2014). In fact, Spanish was the home language of 3.79 million bilingual students in fall 2016. Arabic, Chinese, and Vietnamese were the next commonly reported home languages. Finally, most bilingual students who were classified as English Language Learners (ELL; those who participated in language assistance programs to attain English language proficiency for expected academic content and standards) were kindergarteners in fall 2016. Sixteen percent of kindergarteners were ELLs; 8.5 percent of sixth-graders were ELLs; 6.9 percent of eighth-graders were ELLs; and 4.1 percent of twelfth-grade students were ELLs.

The growing number of young bilingual students warrants attention in understanding their home language experiences and early academic skills. Because bilingual children vary extensively in their early experiences with their two languages, they enter formal schooling with a wide variation of skills. Despite the heterogeneity of bilingual children, developmental research has often treated them as a homogenous group. For example, the focus on bilingual children and

their families has been on those who speak Spanish despite the numerous languages spoken at home (e.g. Hoff, 2013; Peña, 2016; Scarpino, Hammer, Goldstein, Rodriguez, & Lopez, 2019). Further, there are few studies that document bilingual students' early academic skills (Hammer, Hoff, Uchikoshi, Gillanders, Castro, & Sandilos, 2014) and even fewer studies that leverage a *family perspective* to understand bilingual students. Given that children's early academic skills are the gatekeeper to their future academic achievements, understanding the experiences and skills of this substantial student population is vital.

Bilingualism and SES

In the US, bilingual status is often confounded with socioeconomic status (SES), and SES contributes to widely observed differences in academic skills and performance between monolingual and bilingual children. Bilingual homes are disproportionately low-SES homes, and both low-SES and exposure to a language other than English at home are considered risk factors for early academic skills development in a context where English is the primary medium of instruction (Farkas & Hibel, 2008; Haskins, Greenberg, & Fremstad, 2004; Hernandez, 2004). Thus, further examination of the differential effects of bilingualism and SES are warranted. The majority of studies targeted children from low-SES homes or do not provide information about the children's SES. Research that involves children from various SES groups will assist the field in disentangling the effects of SES and bilingualism.

Family SES, which typically comprises parental education, occupational prestige, and household income, sets the stage for children's early academic skills development by directly providing literacy- and numeracy-rich experiences at home and by indirectly providing the social capital or resources that are necessary to succeed in school (Coleman, 1988; Kalil, Ryan, & Corey, 2012; Lareau, 2011). Particularly, family income appears to play the greatest role in early

childhood (Crowe, Connor, Petscher, 2009). Extant literature has shown that SES is significantly predictive of early reading and math outcomes (Aikens & Barbarin, 2008; Duncan et al., 2000). For example, the results of a meta-analysis examining SES and academic achievement suggested a medium to strong SES-achievement relation at the student level and an even stronger relation at the school level (Sirin, 2005). Minority status acted as a moderating factor; SES was a stronger predictor of academic achievement for White students than for minority students (Sirin, 2005).

Specifically, SES may impact academic outcomes through the quality of the home learning environment (Cheadle, 2008; Griffin, Burns, & Snow, 1998). For instance, affluent parents may provide more pictures books for their children, may be able to visit bookstores and museums more often, and may have more time to read books to their children (Hoff, 2013; Lareau & Horvat, 1999). The exposure to the kinds of literacy and numeracy experiences that foster academic skills for low-SES and high-SES children are different (e.g. Aram, Korat, Saiegh-Haddad, Arafat, Khoury, & Elhija, 2013; Froiland, Powell, Diamond, & Son, 2013). It remains unclear how much of bilingual children's skills are due to SES and how much is a function of their primary home language. While the effect of SES is strong, there is evidence that SES is not likely to fully account for the difference between monolinguals and bilinguals (Farkas & Hibel, 2008). Hence, looking at parenting practices may shed light on relevant factors in predicting young children's reading and math skills.

Research is needed on factors that influence early skills among young bilingual children, including characteristics of the children, their families, and their home language experiences. Additionally, more information is needed on the effects of children's home language experiences (i.e., resources in the home, literacy activities) and parental expectations on the development of their two languages. This study disentangles the impact of SES and home learning environment.

Home Literacy Practices and Home Learning Environment

The relationships and interactions that children have with their parents have life-long implications for their development, and parenting has long been thought as a way to promote academic outcomes through enhancing children's social or cultural capital (Aram & Levin, 2004; Cheadle, 2008; Duncan & Brooks-Gunn, 2000). Research on parenting is anchored in the notion that the family and home is where a child first encounters language, literacy, and numeracy, and is where opportunities to observe, explore, and participate in learning activities are ample (Bornstein, 2006; Cabell et al., 2013; Farver et al., 2013; Lareau, 2011; Lee et al., 2014; Lonigan et al., 2000). These early skills oral language, literacy, and numeracy are arguably the foundation of later academic achievement. When parents and children engage in educational activities together, many dimensions of child development are stimulated (Baker, 2013; Hart & Risley, 2003; Roberts, Jergens, & Burchinal, 2005). Examining specific parent practices and expectations will help us gain a more nuanced understanding of what kinds of parenting aspects aid children in being ready for kindergarten.

The literature refers to parent and child activities in the home with the following terms: home learning environment, home literacy environment, home literacy practices, home literacy model. These terms emphasize home as a space where children's initial learning of language and literacy begins. One of the initial investigations of home literacy experiences involved English-monolingual children from middle-SES homes and found that there were differential effects on oral and written language (Senechal et al., 1998). Thus, Senechal and LeFevre (2002) devised the "home literacy model" through an intensive five-year longitudinal study involving English-monolingual, middle-SES children in Canada. The home literacy model represented relations

among home literacy experiences (shared book reading and parent teaching about reading and writing) and child outcomes (language, phonological awareness, and emergent literacy at the beginning of first grade). Outcomes for the end of first grade included child book exposure and reading. The child outcome for the end of third grade was reading. Indeed, the model suggested differential effects for each type of home literacy experience on each child outcome. Senechal extended the home literacy model longitudinally to children from middle-SES, French-Canadian families from kindergarten to grade four. Findings showed that parent book reading and teaching about literacy are distinct domains of home literacy experiences and book reading is directly related to children's vocabulary but is not related to early literacy or phoneme awareness. Parent teaching about literacy is directly related to children's early literacy skills, is indirectly related to phoneme awareness, and is not related to vocabulary. Essentially, Senechal was able to rigorously apply the home literacy model to another language population, which set the grounds for other researchers to examine home literacy for populations that are low-SES and bilingual.

In exploring the home literacy experiences of low-SES populations, an alternative term, home learning environment, was introduced to include print resources as a factor that potentially drives literacy activities. The addition of print resources was an attempt to consider SES when conceptualizing what involves a home environment rich in learning opportunities. In a study on the trajectories of the home learning environment across 1,852 children's first five years, six learning environment trajectories were identified: low rise, low decline, moderate decline, moderate rise, high decline, and high stable (Rodriguez & Tamis-LeMonda, 2011). Each trajectory was significantly associated with children's vocabulary and early literacy skills prior to kindergarten entry. Overall, this study elucidated the variability in the early home learning

environments of children from ethnically-diverse, low-SES families (Rodriguez & Tamis-LeMonda, 2011).

Farver, Xu, Eppe, and Lonigan (2006) found that parents' direct involvement in and encouragement of literacy-related activities in the home (e.g., reading to child, library visits, teaching letters, rhyming games, and focus on words) was related to their preschool children's oral language ability. Stephenson, Parrila, Geogiou, and Kirby (2008) found that parents' beliefs about home literacy determined how they aided their children's task-focused behavior and thus influencing emergent literacy and word reading skills. While home learning environments have been explored for low-SES populations, they have yet to be fully explored for bilingual populations.

Family Literacy Practices

Family literacy practices, as used in this dissertation, refers to the practices that parents and children engage with in their homes and places emphasis on the individuals – bilingual families – involved in such practices. Further, this term family literacy aligns with research that suggests that literacy exists on a spectrum and is socially- and politically-constructed (Auerbach, 1989). Practices include: (1) parent reads books to child, (2) parent reads books to child in home language, (3) parent tells stories to child, (4) parent sings songs to child, (5) child looks at picture books, (6) child reads or pretends to read books, (7) parent talks about nature and science with child, (8) parent and child play games and puzzles, (9) parent and child do arts and crafts, and (10) parent and child practice reading/working with numbers. These practices are those that have been widely accepted for fostering children's early academic skills: oral language, literacy, and numeracy (e.g. Aikens & Barbarin, 2008; Hoff, Laursen, Tardif, & Bornstein, 2002; Weigel, Martin, & Bennett, 2006). The potential of leveraging family literacy practices to understanding

the early skills of bilingual children is well-documented, particularly in qualitative studies (Purcell-Gates, 2007; Rogers, 2002).

Bilingual family literacy practices, oral language, and early reading skills. Family literacy practices positively contributed to bilingual children's oral language skills. For example, the frequency of parental book reading was significantly associated with Chinese-English bilingual children's expressive English ability (Chen & Ren, 2019). Even when the majority of parents read to their children in Chinese and presumably the books used for reading were most likely written in Chinese, children's Chinese language outcomes were not impacted. One possible explanation could be that children were gaining English language exposure in preschool. Parental book reading in English, and even in Chinese, facilitated children's vocabulary acquisition and oral language skills in English.

This finding was apparent in research involving Spanish-English bilinguals from immigrant, low-income homes (Farver et al., 2013). When parents read books to their children in either English or Spanish, their children experienced oral language gains in the respective language – but not across languages. Further, another study found that the frequency with which mothers read to their Spanish-English bilingual children had a positive impact on the growth of children's narrative development in English (Bitetti & Hammer, 2016). Reading a book at least once a week allowed children to internalize the more global features of narrative in order to tell their own stories. This finding was held across varying levels of maternal education, children's English proficiency, and children's language exposure and usage in the home. However, book reading with mothers did not have similar significant impact on growth of vocabulary in English. This lack of impact may be due to the fact that children were enrolled in preschools and schools

that provided instruction in English. It was instruction in English provided at schools that most captured the variance in children's vocabulary growth.

Research on bilingual family literacy practices have focused on maternal influence (e.g. Lewis, Sandilos, Hammer, Sawyer, & Méndez, 2016). Interestingly, when no relationship was found between literacy practices in the home and Spanish-English bilinguals' emergent literacy abilities in Head Start, the researchers suggested that a possibly reason was low maternal education (Hammer, Miccio, & Wagstaff, 2003). Mothers of "simultaneous learners" in read to their children two to four times per week and mothers of "sequential learners" read books to their children once a week on average (Hammer et al., 2003).

Finally, regarding print resources in the home, the literature has consistently show limited effects of print availability in bilingual homes on early literacy skills. For instance, the number of books in the home was not associated with any of the language outcomes because there was little variability in the number of books owned by some Chinese-English families (Chen & Ren, 2019). The small number of books in homes may have reflected the low levels of SES and parental education. These home factors restricted families' access to print resources to support their children's early skills.

Bilingual family literacy practices and early numeracy skills. Children and parents interactively engage in counting, number recognition, and logical games at home, and these activities have the potential to influence children's math achievement as early as the start of formal schooling in kindergarten (Ginsburg-Block et al., 2009; Manolitsis et al., 2013). Compared to research on literacy activities, research that examines parent-child numeracy activities is less abundant and research that involves bilingual students is scarce. For this

dissertation, we operationalized family literacy practices to include not only literacy activities but also numeracy activities.

Anders and colleagues (2012) found that numeracy activities predicted children's numeracy skills at the age of three, and these children maintained this advantage at the age of five. LeFevre et al. (2009) found that some numeracy activities that involved incidental exposure to numeracy through real-world tasks accounted for a significant amount of variance in math knowledge and fluency skills above and beyond vocabulary, working memory, and home learning environment. However, LeFevre et al. (2010) found that more formal numeracy activities that parents initiated to their children contributed significantly to early numeracy skills rather than those incidental (informal) numeracy activities (such as card games or counting money).

Some studies have demonstrated that an umbrella of parent-child home activities is associated with early math skills. Melhuish (2008) found that a general home learning environment predicted math achievement for seven year olds. Baker (2013) found that parents who engaged in more frequent home learning activities and provided more books in their homes had children with higher math test scores at pre-school compared to children from families where parents reported less frequent home learning activities and fewer books in their home. Perhaps language skills are necessary for solving math tasks in school.

Finally, in a retrospective study with 73 Latino, Spanish-English bilingual middle school students who recounted their early family literacy and numeracy practices, findings showed that home activities at kindergarten entry predicted early elementary and middle school math skills (Lopez, Gallimore, Garnier, & Reese, 2007). Literacy and numeracy activities were related to each other and reflected home environments conducive to fostering literacy and numeracy skills.

Parental Expectations

***Parental expectations and early skills*.** The complexities of parental expectations may contribute to early academic skills. Parental expectations serve as an indicator of the family norms, values, and traditions associated with schooling that influence children's family life and home environments (Rimm-Kaufman, Pianta, Cox, & Bradley, 2003), making expectations an integral aspect of children's home environments. Studies have consistently found that parental beliefs about their children's educational futures predict student achievement (Davis-Kean & Sexton, 2009; Englund et al., 2004), across families from diverse racial and ethnic backgrounds (Hong & Ho, 2005; Yan & Lin, 2005).

Socioeconomic factors indirectly relate to children's academic skills through parents' beliefs and behaviors such as reading activities, playing activities, and showing warmth (Davis-Kean, 2005). Davis-Kean showed that the indirect link of parents' education to their behaviors (home learning activities) is substantially related to parents' educational expectations for their children. Similarly, Joe and Davis (2009) found that parents' academic expectations and behaviors were associated with Black boys' cognitive achievement in kindergarten. When parents emphasized the importance of academic skills, their sons attained higher reading and math achievement (Joe & Davis, 2009). Kindergarten girls also attained higher reading and math scores when their parents had higher expectations for them (Galindo & Sheldon, 2012). Research on Latino parents' aspirations and expectations for their children provide further insight. Goldenberg and colleagues (2001) reached the four following conclusions: (1) Latino immigrant parents wanted their children to attend college; (2) immigrant Latino parents attributed high instrumental value to formal schooling, and neither time spent in the U.S. nor perceived discrimination diminished this belief; (3) educational aspirations were high and

invariant throughout the elementary years; however, educational expectations fluctuated depending on how well their children perform in school; and (4) children's school performance influenced parents' expectations, but expectations did not influence performance. Ultimately, children's achievement through elementary school did not always align with their parents' educational expectations or aspirations (Goldenberg, Gallimore, Reese, & Garnier, 2001).

It appears that parental expectations are a malleable variable. For instance, Aunola and colleagues (2002) found that parents' positive beliefs about their children's academic skills and children's task focus go hand in hand. When parents display high confidence in their children's skills, their children feel more motivated to complete, rather than avoid, academic tasks, which consequently, improved their reading development and contributed to parents' later beliefs. The family environment, which consists of parental beliefs and expectations, is the foundation for children to develop strategies that induce academic success (Georgiou, Manolitsis, Zhang, Parrila, & Nurmi, 2013).

Meta-analytic research has documented the important role that parenting plays in fostering children's academic skills. For example, Wilder (2014) found that regardless of a definition of parental involvement or measure of academic achievement, the relationship between parental involvement and academic achievement was positive and consistent across different grade levels and racial groups. This relationship was strongest if parental expectations of child's educational achievement was the core of the definition. Fan and Chen (2001) also found that parental expectations for child's educational achievement has the strongest relationship with child's academic achievement. Castro, Exposito-Casas, Lopez-Martin, Lizasoain, Navarro-Asencio, and Gaviria (2015) suggested that this strong relationship may reflect how children are likely to harbor similar attitudes as their parents, so when parents have

high expectations, which reflect parents' beliefs and attitudes toward education in general, their children will too, and this is vital for their academic performance.

Variations in Parenting Practices

Although research on family literacy practices of low-SES families often highlights the deficits of the home environments, research has noted the variability within family practices in low-income households (e.g., Farver et al., 2006). Despite their relatively low reading test scores in school (as compared to their middle- and high-SES counterparts), Purcell-Gates (1996) concluded that children from low-income homes, have the abilities to learn about reading and written language to the degree to which they experience it in their lives, at home and in the community through a variety of literacy experiences, such as story and Bible reading events, long before entering schools (Purcell-Gates, 1996; Taylor & Dorsey-Gaines, 1988).

Moreover, low-income parents have less direct experience with US schools than some other parents. Gillanders and Jimenez (2004) found that the Mexican parents in their study performed roles as active supporters who coordinated literacy practices at home with practices at school. Hence, as promoters of positive effects of bilingualism and consequently literacy learning for their kindergarten-age children. In the early grades, differences in educational background is less critical, because school-related assignments are relatively simple and school structure is more personal. As children advance in grades, school tasks and homework increase in complexity, sometimes exceeding the ability of parents to perform them. More formal education renders parents better able to assist their children with homework, to advocate for and acquire special services when necessary, and to help their children consider alternative strategies and solutions (Epstein & Sanders, 2002; Lareau & Horvat, 1999).

Furthermore, the maternal role is central in determining the quantity and quality of home learning experiences (Lareau & Horvat, 1999). Certainly, maternal literacy practices and beliefs predicted children's print-related knowledge, accounting for material education (Skibbe, Justice, Zucker, & McGinty, 2008). Similarly, Aram and Levin (2004) found that the quality of maternal writing mediation correlated concurrently with kindergarteners' literacy skills. In following-up with the students to second grade, the results indicated that the children's literacy measures in school were indeed predicted by maternal writing mediation beyond SES and prior achievement in kindergarten.

Finally, parents' beliefs about literacy informed their practices and preferences for bilingualism. For example, middle-class Chinese immigrant parents placed very high importance on their children's reading development, and so they worked with their children to read outside of school and taught them to read through phonics (Li, 2006). Similarly, Mexican and Central American immigrant families described the process of learning to read with phonetics and taught their children early literacy skills this way (Reese & Gallimore, 2000). Some Vietnamese parents believed that developing their young children's literacy in Vietnamese would make subject matters more understandable in English; these parents opted for bilingual education regardless of their children's English proficiency (Young & Tran, 1999). Developing children's bilingualism was also a goal for Chinese parents regardless of their own levels of Chinese competency or the availability of Chinese resources at home (Lao, 2004).

In capturing an overview of the home literacy practices of bilingual families, we can gather a clearer picture of the early academic skills that bilingual kindergartners bring into formal schooling. Improving the field's understanding of bilinguals' early academic skills is critical, given the importance of these areas to later academic success (Scarborough, 2001; Snow

et al., 1998). Such information will assist educators, researchers, and policy makers in understanding the developmental trajectories of bilinguals and can be used to help understand if and when bilinguals have learning concerns.

The Present Study

To gain a more nuanced understanding of bilingual families, the present study considered: (1) family literacy practices, (2) parental expectations of children's years of schooling, and (3) parental expectations of children's skills by kindergarten. Previous quantitative studies have investigated these variables but not this specific combination of variables. Bodovski and Farkas (2008) used the ECLS-K:1998 cohort data to test Lareau's theory of parental "concerted cultivation" as a mediator of the effect of SES on children's reading scores. They used 29 items, which included parental expectations variables, to construct a measure for concerted cultivation. Similarly, Cheadle (2008) used the same dataset to also study concerted cultivation and found that it played a more significant role in explaining racial/ethnic gaps in achievement than expected from Lareau's discussion. Thirdly, using the 1998 dataset, Farkas and Hibel's (2008) findings suggested that some parenting behaviors may moderate the negative effects of family poverty on children's school readiness.

One way that the present study builds on the existing research is that it draws on nationally representative, large-scale data in order to study the oral language and early reading and numeracy skills of bilingual children, who are an increasing population in U.S. schools. In this relatively new ECLS-K:2010 cohort, children whose home language was not English made up 15% (approximately 3,000 children) of the full sample. Also, 4% of the full sample were Asians. In contrast, the ECLS-K:1998 cohort was comprised of 2.4% Asians and 8% bilingual (Tourangeau, Le, Nord, & Sorongon, 2009). With regard to the key predictors, the study treated

family literacy practices, parental expectations of children's years of schooling, and parental expectations of children's skills by kindergarten as distinct variables in the analyses. Findings from this study contribute to the body of knowledge on bilingual family literacy practices. This study captures the heterogeneity of bilingual families in regard to background factors and variety and prevalence of family literacy practices and parental expectations, all of which challenge the notion that bilingual families are homogenous or deficient.

Research Questions

Informed by the literature on the complexities of bilingual family literacy practices, this dissertation asks the following research questions:

Section 1: Bilingual families characteristics

1. In bilingual families, what are the parent profiles?
    a. What is the household composition (two biological or adoptive parents; one biological or adoptive parent and one other; one biological or adoptive parent; or other kinds of guardians)?
    b. What is the household income?
    c. What is the occupational prestige of each parent?
    d. What is the educational level of each parent?
    e. What was the mother's age at her first child's birth?
    f. What is the overall socioeconomic status?
2. What are the characteristics of bilingual children?

Section 2: Family literacy practices

3. What are the print resources in bilingual homes?

4. How frequently do parents engage in family literacy practices with their kindergarteners?

    a. Practices include: (1) parent reads books to child, (2) parent reads books to child in home language, (3) parent tells stories to child, (4) parent sings songs to child, (5) child looks at picture books, (6) child reads or pretends to read books, (7) parent talks about nature and science with child, (8) parent and child play games and puzzles, (9) parent and child do arts and crafts, and (10) parent and child practice reading/working with numbers.

5. How do these family literacy practices contribute to bilingual kindergarteners' early academic skills (oral language, literacy, and numeracy)?

Section 3: Parental expectations

6. What do parents aspire for their children in terms of educational attainment?

7. What do parents expect their children to be able to do at the start of kindergarten?

    a. Skills include: (1) count, (2) share, (3) use pencil/draw, (4) pay attention/be calm, (5) know letters, and (6) express needs/communicate well

Section 4: Models with family literacy practices and parental expectations

8. Above and beyond family socioeconomic status, what are the unique contributions of family literacy practices, parental aspirations of their children's educational attainment, and parental expectations of their children's skills at the start of kindergarten on bilingual kindergarteners' early academic skills (oral language, literacy, and numeracy)?

9. Finally, do these unique contributions persist through the end of kindergarten?

Sections 1, 2, and 3 are descriptive as they provide an overview of bilingual families regarding their background characteristics, family literacy practices, and parental expectations. Section 4 required an initial decision to take an exploratory approach for parental expectations. It appears possible that parental aspirations of children's educational attainment and children's skills by kindergarten would positively predict oral language and early literacy and numeracy skills, but not all research has demonstrated this to be consistently true. Further, it was anticipated that parents who reported more frequent family literacy practices would have children with more advanced oral language, literacy, and numeracy skills compared to parents who reported less frequent practices. Finally, it was anticipated that the unique contributions of bilingual family literacy practices, but not parental expectations, would persist through the end of kindergarten for children's early skills.

Overall, the goal of the present study was to understand the roles that family literacy practices and parental expectations play above and beyond bilingual family characteristics in predicting young bilingual children's early academic skills. By answering these questions, researchers and educators could design programs and interventions that aid parents in preparing children for formal schooling.

Chapter 3. Methods

Dataset

Data for the current study come from the Early Childhood Longitudinal Study-Kindergarten Class of 2010-11 (ECLS-K) public use version. Designed to represent all children entering kindergarten in the United States in 2010, ECLS-K is a nationally representative probability sample of approximately 18,200 students from their kindergarten year to the spring of 2016, when most of them are expected to be in fifth grade (Tourangeau, Nord, Lê, Schocklin, Honeycutt, Sorongon, Blaker, & Hagedorn, 2012). The kindergarteners were sampled from 1,330 schools in 90 counties across the U.S. During the first year of data collection, when all participants were in kindergarten, data were collected in both fall and spring. The data are collected from students, parents and guardians, teachers, school administrators, and care providers through surveys and questionnaires, providing information on students' statuses at entry to school, transition into school, and progression through the elementary grades.

Of particular concern to the present study, parents were given the option to complete the interviews and surveys in English or Spanish. In the Fall 2010, approximately 9% of the overall sample chose to conduct the interview in Spanish, and in the Spring 2011, approximately 11% opted for Spanish. From the interviews and surveys, detailed demographic and home environment information, as well as direct and reported measures of children's school readiness outcomes, were closely examined in the present study. Parents who reported that they spoke a language other than English primarily in their homes or that they spoke both English and another language were included in the present study and thereafter referred to as "bilingual".

Measures

Dependent variables. This study determined school readiness with scores in oral language, early reading, and early math collected from ECLS-K:2010 preLAS and direct child cognitive assessments from the fall and spring of kindergarten (Tourangeau, Nord, Lê, Sorongon, & Najarian, 2009). The assessment frameworks came from national and state standards, the National Assessment of Educational Progress, and ECLS-K frameworks in order to create test questions that were developmentally sound. The direct cognitive assessments in reading and math were individually administered and occurred as two-stage adaptive tests (Tourangeau, Nord, Lê, Sorongon, & Najarian, 2009). Assessors asked the children questions related to images, such as pictures, letters of the alphabet, short words, and numbers, that were presented on a small easel. Children responded by pointing or telling the assessor their answers, but they were not required to write their answers or explain their reasoning. The test scores were measured by item response theory in order to place all children on a common ability scale and to be comparable over time.

Oral language. At the fall of kindergarten, all children were administered a language screener from the Preschool Language Assessment Scale which consisted of two, low difficulty tasks (Simon Says receptive language and Art Show expressive language), prior to the direct cognitive tests. A full score on the preLAS was earning the maximum of twenty while a proficient score was sixteen or higher. Children who attained a minimum proficiency score on the screener proceeded to take the full direct cognitive tests. Additionally, all children received the first set of items on the reading assessment in English, regardless of their home language or language screener score. Spanish-speaking children who did not attain at least the minimum score were then administered a short reading assessment in Spanish that measured Spanish early

reading skills and a math assessment that had been translated into Spanish. Children whose home language was one other than English or Spanish and who did not attain at least the minimum score were not administered any of the remaining cognitive assessments beyond the first set of reading items.

Early literacy skills. Students' overall reading skills in kindergarten were measured by basic language and literacy questions that included: age appropriate questions for print familiarity, letter recognition, beginning and ending sounds, rhyming words, and even word recognition. The design of the reading assessment allowed for the computation of reading scores for all children, regardless of home language and English proficiency. This assessment has a reported reliability of .95 for both fall and spring of kindergarten for the whole sample.

Early numeracy skills. The math assessment measured emergent skills concerning number recognition, number sense, counting, and how big or small numbers are in comparison to each other. For example, children were shown a number on a card, and children spoke their answers to the assessors. This assessment has a reported reliability of .92 for fall and .94 for spring of kindergarten for the whole sample.

Independent variables. Independent variables include family literacy practices, parental expectations of children's years of schooling, and parental expectations of their children's skills by kindergarten.

Family literacy practices. The study operationalized family literacy practices with ten parent-child activities that have the potential to foster the child's oral language and early reading and math skills. These ten activities include: parent reads books to child, parent reads books to child in home language, parent tells stories to child, parent sings songs to child, child looks at picture books, child reads or pretends to read books, parent talks about nature and science with

child, parent and child play games and puzzles, parent and child do arts and crafts, and parent and child practice reading/working with numbers. Parents specified how many days per week they engaged in these activities with their children. Responses ranged from zero to seven days per week. To control for noise, exploratory factor analysis for these ten items resulted in one latent variable, which we designated as "family literacy practices" measure. The eigenvalue for the first factor was 2.04, indicating that the first factor is strong, and the other eight factors have eigenvalues less than 1.

Parental aspirations for children's educational attainment. The parental aspirations of their children's educational attainment was a key independent variable in the analyses. This variable was coded as a continuous measure: less than high school graduation = 11; high school graduation or GED only = 12; attend (or complete) 2-year college, vocational training, or attend college with incomplete degree = 14; graduate from a 4- or 5- year college (bachelor's degree) = 16; and obtain master's degree or equivalent and above = 18. Thirty parents reported expecting that their children would earn less than a high school diploma. Parents reported relatively high aspirations for their children's educational paths. On average, parents reported that they expected their children to attain a bachelor's degree.

Parental expectations of child's skills by kindergarten. Parents were asked how important it was that their children be able to do the following by kindergarten: count, share, use pencil/draw, pay attention/be calm, know letters, and express their needs/communicate well. The code "1" represented an "essential" skill by kindergarten; 2 = very important; 3 = somewhat important; 4 = not very important; and 5 = not important. For all six skills, parents opted towards "very important" and "essential". To control for noise, exploratory factor analysis resulted in one latent variable for these six skills. The eigenvalue for the first factor was 2.58, indicating that the

first factor is very strong. The other five factors have eigenvalues less than 1. Appendix factor loadings

***Socioeconomic status*.** Socioeconomic status was determined by five parent characteristics that included: mother's and father's levels of education, mother's and father's occupational prestige score, and household income in USD (Tourangeau, Nord, Le, Sorongon, & Najarian, 2009). The ECLS-K created this SES variable using five variables to compute a continuous, composite measure of SES for each child. The majority of studies that analyzed the ECLS-K dataset have also opted to use this composite SES measure (Cheadle, 2008; Claessens, Duncan, & Engel, 2009).

Covariates. This study included controls for demographic characteristics to adjust regression estimates of oral language, reading, and math test scores for child background differences. Covariates help to reduce bias in the estimated effects of kindergarten test scores. The covariates were child's race/ethnicity, gender, and age in months at the time of assessment in the fall of kindergarten. Races included: White, African American, Hispanic, Asian, or other race/ethnicity, and Hispanic was the baseline group because they were the majority.

Analysis Plan

Research questions 5, 8, and 9 were answered with regression analyses. The following equations represented regression models for research question 5: How do these family literacy practices contribute to bilingual kindergarteners' early academic skills (oral language, literacy, and numeracy)?

$$\text{Oral language} = \beta 0 + \beta 1\text{FamilyLiteracyPractices} + \beta 2\text{SES} + y\text{Covariates} + e$$

$$\text{Early literacy skills} = \beta 0 + \beta 1\text{FamilyLiteracyPractices} + \beta 2\text{SES} + y\text{Covariates} + e$$

$$\text{Early numeracy skills} = \beta 0 + \beta 1\text{FamilyLiteracyPractices} + \beta 2\text{SES} + y\text{Covariates} + e$$

The following equations represented regression models for research question 8: Above and beyond family socioeconomic status, what are the unique contributions of family literacy practices, parental aspirations children's educational attainment, and parental expectations of their children's skills at the start of kindergarten on bilingual kindergarteners' early academic skills (oral language, literacy, and numeracy)?

$$\text{Oral language} = \beta 0 + \beta 1\text{FamilyLiteracyPractices} + \beta 2\text{PESchooling} + \beta 3\text{PESkills} + \beta 4\text{SES} + y\text{Covariates} + e$$

$$\text{Early literacy skills} = \beta 0 + \beta 1\text{FamilyLiteracyPractices} + \beta 2\text{PESchooling} + \beta 3\text{PESkills} + \beta 4\text{SES} + y\text{Covariates} + e$$

$$\text{Early numeracy skills} = \beta 0 + \beta 1\text{FamilyLiteracyPractices} + \beta 2\text{PESchooling} + \beta 3\text{PESkills} + \beta 4\text{SES} + y\text{Covariates} + e$$

Finally, do these unique contributions persist through the end of kindergarten (research question 9)? As a robustness check, research question 9 captured change models. The change models depicting children's test scores from the fall of kindergarten to the spring of kindergarten were as follows:

$$\text{Oral language Spring} = \beta 0 + \beta 1\text{OralLanguageFall} + \beta 2\text{FamilyLiteracyPractices} + \beta 3\text{PESchooling} + \beta 4\text{PESkills} + \beta 5\text{SES} + y\text{Covariates} + e$$

$$\text{Early literacy skills Spring} = \beta 0 + \beta 1\text{LiteracyFall} + \beta 2\text{FamilyLiteracyPractices} + \beta 3\text{PESchooling} + \beta 4\text{PESkills} + \beta 5\text{SES} + y\text{Covariates} + e$$

$$\text{Early numeracy skills Spring} = \beta 0 + \beta 1\text{NumeracyFall} + \beta 2\text{FamilyLiteracyPractices} + \beta 3\text{PESchooling} + \beta 4\text{PESkills} + \beta 5\text{SES} + y\text{Covariates} + e$$

Regarding missing data, the analyses used data from bilingual students who had direct cognitive test scores from the fall of kindergarten and the spring of first grade and were not missing data on gender. National Center for Education Statistics (NCES) provided adjustments to the sampling weights (NCES, 2014). The child panel weights for the full sample for each wave and the corresponding PSUs were used to address the representativeness of the sample. Missing dummy variable indicators signified missing data were accounted for. Missing data were imputed with the mean for continuous variables and zero for dichotomous variables in regard to covariates. These dummy variables were later included in the regression models indicating whether or not the value was missing (1=missing; 0=not missing). Regarding key outcome variables, when conducting exploratory factor analysis for these variables, missing values were handled by the maximum likelihood with missing values (mlmv) option in STATA SEM command. This is the most rigorous method for handling missing data for key outcome variables.

Chapter 4. Results

Section 1 research questions examined characteristics of bilingual families.

Research question 1: In bilingual families, what are the parent profiles?

The characteristics of bilingual families, particularly regarding parents, are illustrated in Table 1. Firstly, from a total of 2396 bilingual families, 81 percent of these families consisted of two biological or adoptive parents. The remainder of the families consisted of one biological/adoptive parent and one other guardian, one parent only, or other kinds of guardians.

Household income of bilingual families (n=2621) had wide variations. There were six levels of household income: the lowest income level was $2,500 to $15,000 per year (24%); $15,001 to $30,000 (34%); $30,001 to $45,000 (14%); $45,001 to $60,000 (7%); $60,001 to $75,000 (5%); and the highest income level was $75,001 and above (16%). Household income of bilingual families had a wide range from $2,500 to more than $200,000. The average household income was $32,00. The majority of bilingual families (72%) earned a household income of less than $45,000 per year.

Parental educational levels included parents who did not yet earn a high school degree; those who earned a high school degree; those who attended some college; and those who earned a college degree or higher. The majority of mothers did not yet earn a high school degree (45%) while the majority of fathers attended some college (51%). However, more mothers earned a college degree (21%) compared to fathers (13%). Additionally, the average age of the mothers at the birth of her first child was 23 years, and the range of ages was 16 to 38 years.

Parental occupational prestige was operationalized by a coding scheme developed in the Standard Occupational Classification Manual (1980). There are 22 occupation categories where “handlers, equipment cleaners, helpers, and laborers” is coded as 29.6; “mechanics and

repairers" is coded as 39.18; "physicians, dentists, and veterinarians" is coded as 77.5. The majority and on average, both mothers and fathers worked blue collar jobs.

Finally, considering all the above parental characteristics, ECLS constructed a continuous SES measure to reflect the household; the higher the score, the higher the SES. The range was negative 2.33 to positive 2.36, and the mean for bilingual families was negative .49. The mean suggested that the average bilingual family had a relatively low SES score.

Table 1

Characteristics of Bilingual Families from the ECLS-K: 2010 Cohort

	Mean	SD	N	Range
Household Composition				
Two Biological/Adoptive Parents	0.81	/	2396	
One Biological/Adoptive Parent & 1 Other	0.04	/	2396	
One Biological/Adoptive Parent Only	0.14	/	2396	
Other Guardians	0.01	/	2396	
Household Income				
$2500-15000	0.24	/	2621	
$15001-30000	0.34	/	2621	
$30001-45000	0.14	/	2621	
$45001-60000	0.07	/	2621	
$60001-75000	0.05	/	2621	
$75001 or more	0.16	/	2621	
Mother's Educational Level				
No High School Degree	0.448	/	2096	
High School Degree	0.185	/	2096	
Some College Education	0.154	/	2096	
College Degree or Higher	0.212	/	2096	
Father's Educational Level				
No High School Degree	0.25	/	3119	
High School Degree	0.11	/	3119	
Some College Education	0.51	/	3119	
College Degree or Higher	0.13	/	3119	
Mother's Occupational Prestige	42.90	6.83	3119	29.6 to 77.5
Father's Occupational Prestige	42.02	7.56	3119	29.6 to 77.5
Mother's Age at First Birth	23.42	5.28	2099	16 to 38 years
Overall Socioeconomic Status	-0.49	0.84	3071	-2.33 to 2.36

Note. Occupational prestige followed the coding scheme by the *Standard Occupational Classification Manual- 1980*. There are 22 occupation categories where "handlers, equipment cleaners, helpers, and laborers" is coded as 29.6; "mechanics and repairers" is coded as 39.18; "physicians, dentists, and veterinarians" is coded as 77.5. ECLS constructed the continuous SES measure to reflect the household; the higher the score, the higher the SES.

Research question 2: What are the characteristics of bilingual children?

The characteristics of bilingual kindergarteners are illustrated in Table 2. The race/ethnicity of the children were Hispanic (78%), Asian (12%), White (6%), Black (3%), and another race/ethnicity or multiracial (1%). Forty-nine percent of the children were female, and their average age at the first assessment was 66.57 months (five and a half years). On average, their test scores in oral language, reading, and math increased from fall to spring.

Table 2
Characteristics of Bilingual Kindergarteners

	M	SD	N	Range
Race/Ethnicity				
White	0.06	/	2145	
Black	0.03	/	2145	
Hispanic	0.78	/	2145	
Asian	0.12	/	2145	
Other Race/Ethnicity	0.01	/	2145	
Female	0.49	/	2145	
Age at first assessment	66.57	4.11	2145	56.42-84.26
Direct cognitive test scores				
Oral Language Fall of K	14.98	5.26	2051	0-20
Reading Fall of K	35.03	10.32	1999	21.52-82.48
Math Fall of K	26.63	11.18	1994	6.26-72.68
Oral Language Spring of K	17.18	3.83	2055	0-20
Reading Spring of K	46.19	12.42	2048	21.95-87.02
Math Spring of K	39.77	11.78	2033	6.26-79.86

Section 2 research questions examined family literacy practices in bilingual homes.

Research question 3: What are the print resources in bilingual homes?

Figure 1 illustrates the print resources in bilingual homes. Parents reported the number of books, print resources, that they had in the home, and their answers ranged widely. Forty-eight parents reported that they had zero books in the home while one parent reported having 2030 books in the home. On average, parents reported having 34 books in the home, and the median was 20 books. Data of books were organized in the following six categories due to wide variation: (1) 0-20 books; (2) 21-40 books; (3) 41-60 books; (4) 61-80 books; (5) 81-100 books; and (6) 101-2030 books. 1256 homes had somewhere between 0 to 20 books. 388 homes had 21 to 40 books. 215 homes had 41 to 60 books. 44 homes had 61 to 80 books. 119 homes had 81 to 100 books. Finally, 74 homes had 101 to 2030 books. Further, Table 3 illustrates whether homes had more books in the English language, the home language, or the same number of books in both languages. Overall, most homes had many more books in English (1488 homes) than the home language (184). 424 homes had the same number of books in both languages.

Figure 1. Number of books at home

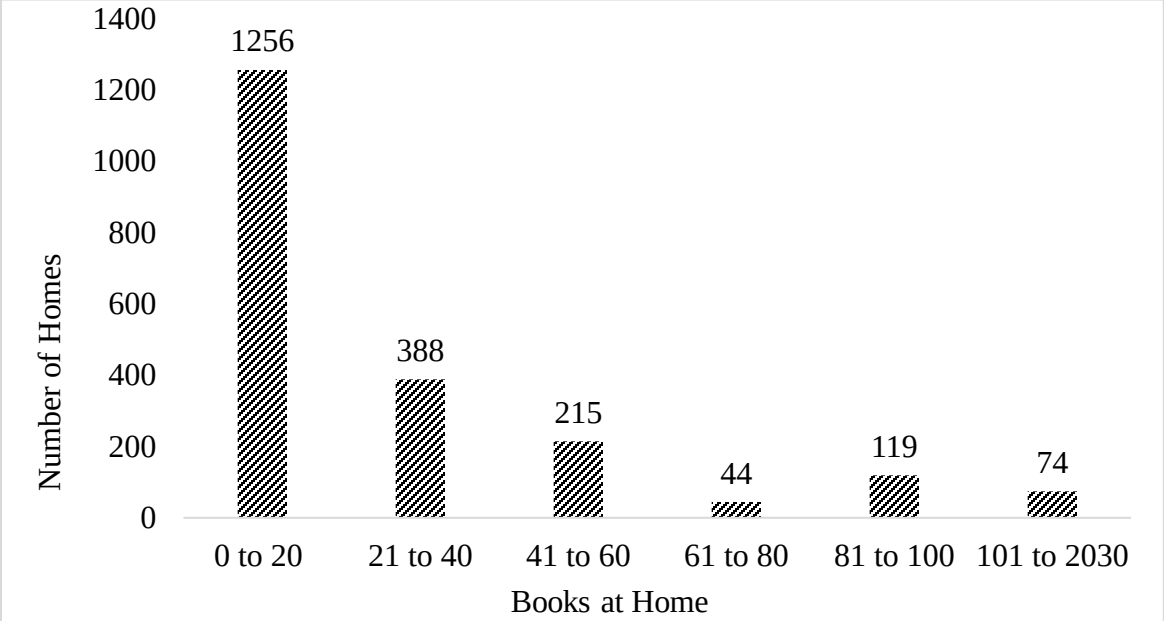


Table 3. Number of books and their languages

Books at Home	More books in English language	More books in home language	Same number of books in English and home language	Total
0 to 20	848	146	262	**1256**
21 to 40	302	14	72	**388**
41 to 60	154	12	49	**215**
61 to 80	39	2	3	**44**
81 to 100	93	6	20	**119**
101 to 2030	52	4	18	**74**
Total	**1488**	**184**	**424**	**2096**

Note. Pearson $chi_2(10) = 43.85$, Pr = 0.000
Mean = 34 books at home, standard deviation = 72.66
Median = 20 books at home
Minimum = 48 homes had 0 books
Maximum = 1 home had 2030 books

Research question 4: How frequently do parents engage in family literacy practices with their kindergarteners?

Family literacy practices were conceptually defined as both parent-directed practices and child-directed practices that foster cognitive development. These bilingual family literacy practices were operationalized by how many times in a week parents and children engage in the following parent-directed practices: read books, read books in home language, tell stories, sing songs, solve puzzles, do arts and crafts, work with numbers, talk about nature and science. The child-directed practices included: how many times in a week the child looks at picture books and read or pretends to read on his/her own.

Altogether, these ten practices demonstrated the literacy practices prevalent in bilingual homes. Working with numbers was the most frequent family literacy practice in bilingual families at an average of five days per week. Next frequent were child looking at picture books

and parent reading books at an average of 4 days per week. Telling stories, singing songs, solving puzzles, doing arts and crafts, and child reading/pretending to read all occurred on average three times per week. The least frequent were reading books in a home language and talking about nature and science at an average of twice in a week. This information is represented in Table 4.

Table 4. Frequency of bilingual family literacy practices

	Mean	SD
Parent-directed practices		
Read books	4.30	2.32
Read books in home language	2.19	2.34
Tell stories	3.71	2.42
Sing songs	3.77	2.60
Solve puzzles	3.55	2.39
Do arts & crafts	3.75	2.50
Work with numbers	5.45	2.07
Talk about nature/science	2.12	2.21
Child-directed practices		
Child looks at picture books	4.31	2.46
Child reads/pretends to read	3.85	2.49
Observations	2145	

Note. A session of shared book reading in any language lasted on average 20 minutes (sd = 11.22).

The duration of a reading session was from one minute to 60 minutes, and on average, a reading session in any language lasted 20 minutes. Table 5 shows the frequency of reading books and the duration of a reading session. Interestingly, the more frequent reading books occurred, the longer the reading session lasted too. An ANOVA revealed that each frequency category was statistically different from the others.

Table 5. Frequency and duration of reading books

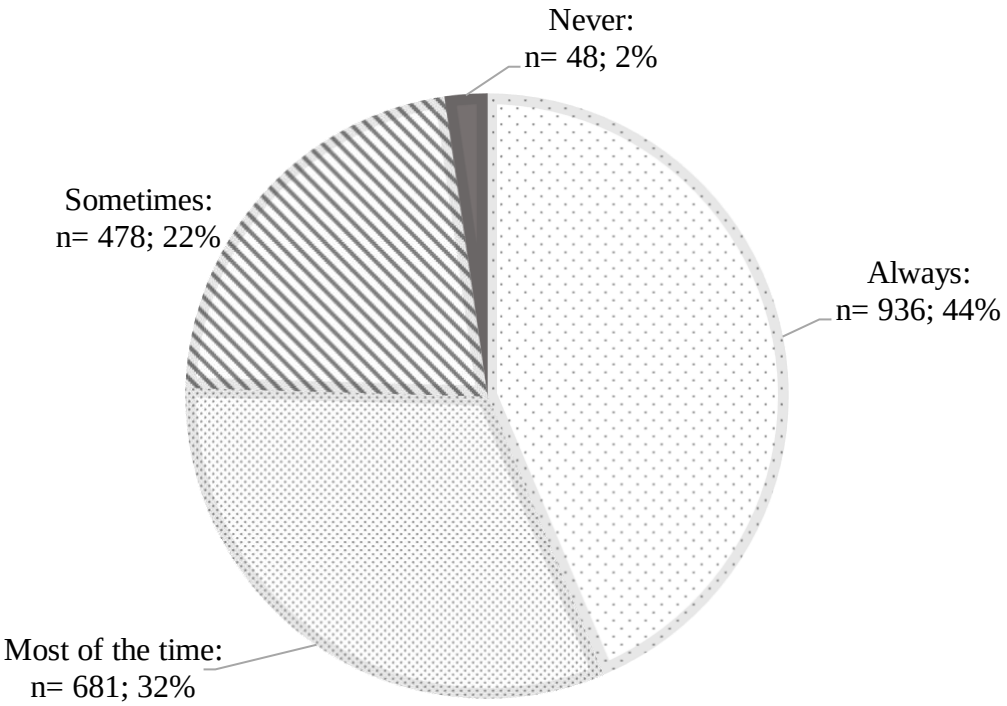
	Duration of a reading session		
Frequency of reading books	M	SD	N
1 to 2 times/ week	19.47	11.26	610
3 to 6 times/ week	19.71	10.39	739
Everyday	22.69	11.75	711
Total	20.66	11.22	2060

Note. Range is 1 – 60 minutes

ANOVA: F-statistic= 18; R_2= 0.02; p=0.00

Finally, in considering the usage of the home language for family literacy practices, data revealed that the majority of bilingual families (936) did indeed always use their home languages. Figure 2 shows that 681 families reported using their home languages most of the time for literacy practices. 478 families reported using their home languages sometimes for literacy practices. And 48 families never used their home languages for literacy practices.

Figure 2. Using the home language for family literacy practices



Research question 5: How do family literacy practices contribute to bilingual kindergarteners' early skills (oral language, literacy, and numeracy)?

Table 6 displays the results from the regression analyses predicting kindergarteners' school readiness (oral language, early reading skills, and early math skills). These results confirm what we had expected. Family literacy practices significantly predicted oral language ($\beta = 0.08$, $p < 0.05$), early literacy skills ($\beta = 0.09$, $p < 0.001$), and early numeracy skills ($\beta = 0.07$, $p < 0.001$). As expected, the impact of SES on oral language ($\beta = 0.51$, $p < 0.001$), early literacy skills ($\beta = 0.37$, $p < 0.001$), and early numeracy skills ($\beta = 0.34$, $p < 0.001$) were significant. As for the covariates, race/ethnicity and age at the first assessment were significant while gender was not significant. Being Black is positively associated with oral language ($\beta = 1.07$, $p < 0.001$) when compared to being Hispanic. Being Asian is positively associated with early literacy skills ($\beta = 0.50$, $p < 0.001$) and early numeracy skills ($\beta = 0.66$, $p < 0.001$) when compared to being Hispanic. Finally, age was positively associated with oral language ($\beta = 0.22$, $p < 0.001$), early literacy skills ($\beta = 0.20$, $p < 0.001$), and early numeracy skills ($\beta = 0.26$, $p < 0.001$).

Table 6

Regression Models Estimating Early Skills at Kindergarten Entry

	Oral Language	Literacy	Numeracy
Family Literacy Practices	0.08*	0.09***	0.07***
	(0.03)	(0.02)	(0.02)
Socioeconomic Status	0.51***	0.37***	0.34***
	(0.04)	(0.02)	(0.02)
Race/Ethnicity			
White	0.15	-0.06	0.11
	(0.15)	(0.09)	(0.08)
Black	1.07***	0.11	0.08
	(0.22)	(0.12)	(0.11)
Asian	0.18	0.50***	0.66***
	(0.11)	(0.06)	(0.06)
Other Race/Ethnicity	0.10	0.23	0.15
	(0.33)	(0.19)	(0.17)
Age at first assessment	0.22***	0.20***	0.26***
	(0.04)	(0.02)	(0.02)
Female	0.04	0.05	-0.01
	(0.07)	(0.04)	(0.04)
	(0.07)	(0.04)	(0.04)
Observations	2035	1983	1978
R_2	0.14	0.30	0.36

Note. Reference group is Hispanic. Standardized coefficients. Standard errors in parentheses

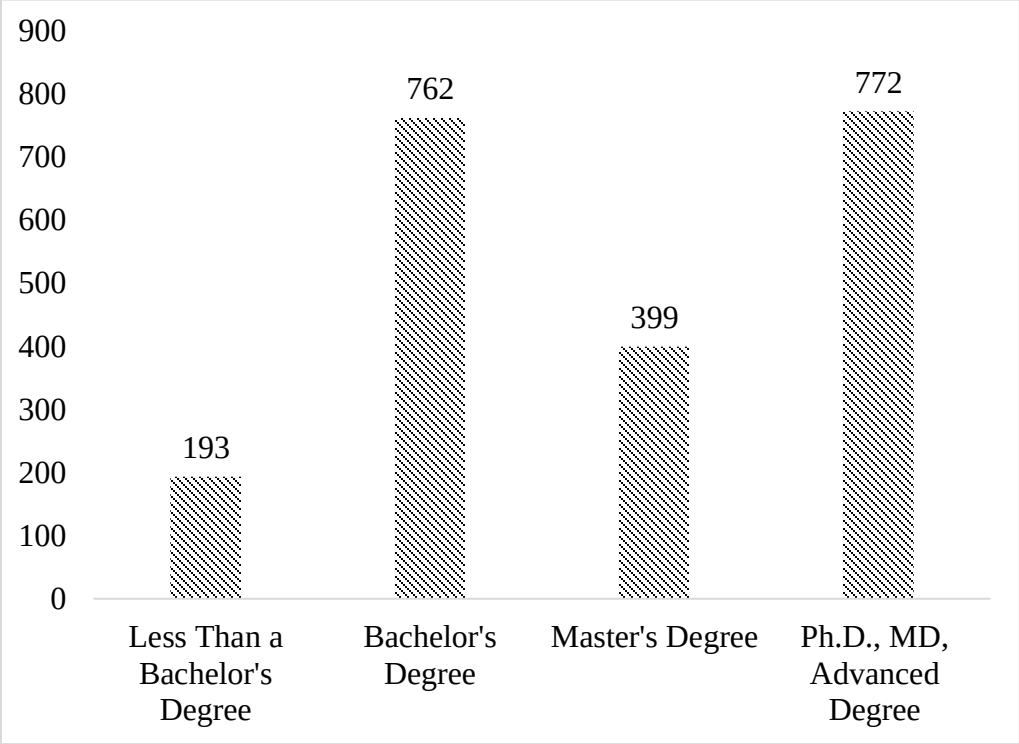
*p<0.05, **p<0.01, ***p<0.001

Section 3 research questions explored bilingual parental expectations of their young children.

Research question 6: What do parents aspire for their children regarding educational attainment?

Parents reported on the educational attainment that they aspired for their children (see Figure 3). One hundred ninety-three parents expected that their children would earn less than a bachelor's degree, which would be less than seventeen years of schooling. Seven hundred sixty-two parents expected that their children would earn a bachelor's degree, which would be seventeen or more years of schooling. Three hundred ninety-nine parents expected their children would earn a master's degree, which would be nineteen or more years of schooling. Seven hundred seventy-two parents expected their children would earn an advanced graduate degree such as a Ph.D. or MD, which would be more than twenty years of schooling. It appears that parents had very high expectations for their children's educational degree attainment.

Figure 3. Parental aspirations of educational attainment for their children



Research question7: What skills do parents expect their children to have at the start of Kindergarten?

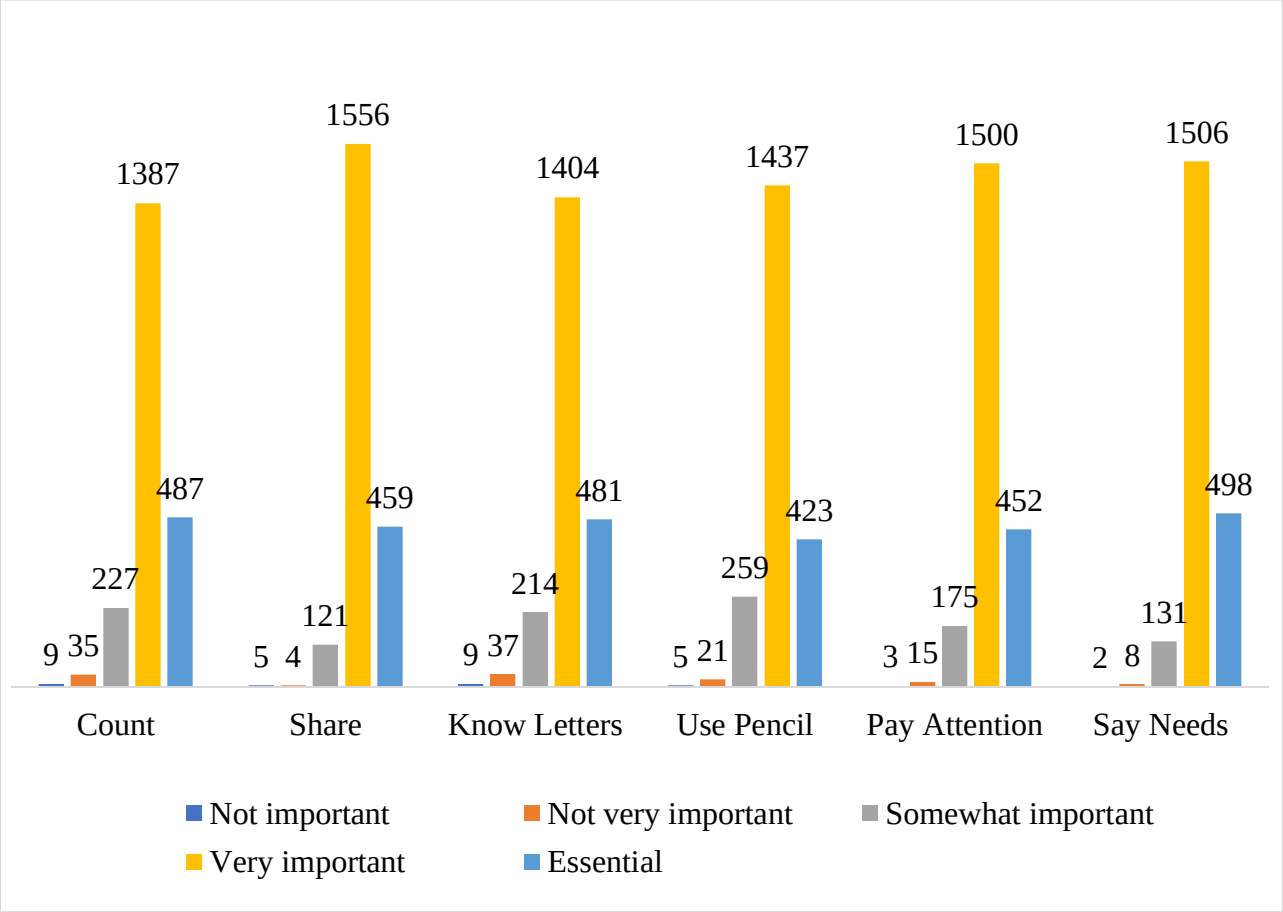
Parents reported on what they expected their children to be able to do at the start of kindergarten: count, share, know letters, use pencil, pay attention, and say/express their needs (see Table 7 and Figure 4). The rating scale was 1 for "not important", 2 for "not very important", 3 for "somewhat important", 4 for "very important", and 5 for "essential". For every skill, on average, parents reported a 4, suggesting that they believe it was very important for their children to be able to perform all six skills at the start of kindergarten. For each skill, the number of parents who reported that it was not important for their children to be able to do was negligible. An overwhelming number of parents reported that each skill was very important. Indeed, bilingual parent reported very high expectations for their children's skills.

Table 7.
Parental expectations of their children's skills at the start of kindergarten

	M	SD	Range
Count	4.08	0.66	1 to 5
Share	4.15	0.53	1 to 5
Know Letters	4.08	0.65	1 to 5
Use Pencil	4.05	0.61	1 to 5
Pay Attention	4.11	0.57	1 to 5
Say Needs	4.16	0.54	1 to 5
Total	2145		

Note. A rating of 1 means "not important"; a rating of 5 means "essential."

Figure 4. Parental expectations of children's skills at kindergarten entry



Lastly, section 4 research questions aimed to predict children's oral language, early literacy skills, and early numeracy skills.

Research question 8: Above and beyond family socioeconomic status, what are the unique contributions of family literacy practices, parental aspirations of their children's educational attainment, and parental expectations of their children's skills at the start of kindergarten on bilingual kindergarteners' early skills (oral language, literacy, and numeracy)?

Table 8 displays the results from the regression analyses predicting kindergarteners' early skills with the three key predictors: family literacy practices, parental aspirations of educational attainment, and parental expectations of children's skills at the start of kindergarten. Family literacy practices significantly predicted oral language ($\beta = 0.07$, $p < 0.05$), early literacy skills ($\beta = 0.08$, $p < 0.001$), and early numeracy skills ($\beta = 0.06$, $p < 0.001$). Parental expectations of educational attainment did not significantly predict early literacy and numeracy skills; but it negatively associated with oral language ($\beta = -0.07$, $p < 0.05$). Parental expectations of skills significantly predicted oral language ($\beta = 0.12$, $p < 0.01$), early literacy skills ($\beta = 0.10$, $p < 0.001$), and early numeracy skills ($\beta = 0.08$, $p < 0.001$).

As expected, the impact of SES on oral language ($\beta = 0.51$, $p < 0.001$), early literacy skills ($\beta = 0.37$, $p < 0.001$), and early numeracy skills ($\beta = 0.34$, $p < 0.001$) were significant. These coefficients are identical to the SES coefficients for the regression models for solely family literacy practices (in research question 5, Table 6).

Regarding the covariates, once again, race/ethnicity and age at the first assessment were significant while gender was not significant. Being Black is positively associated with oral language ($\beta = 1.15$, $p < 0.001$) when compared to being Hispanic. Being Asian is positively

associated with oral language (β = 0.22, $p < 0.05$), early literacy skills (β = 0.53, $p < 0.05$), and early numeracy skills (β = 0.68, $p < 0.001$) when compared to being Hispanic.

Finally, age was positively associated with oral language (β = 0.21, $p < 0.001$), early literacy skills (β = 0.21, $p < 0.001$), and early numeracy skills (β = 0.27, $p < 0.001$).

Table 8.
Regression Models Estimating Kindergarteners' Early Skills with Family Literacy and Parental Expectations

	Oral Language	Literacy	Numeracy
Family Literacy Practices	0.07*	0.08***	0.06***
	(0.03)	(0.02)	(0.02)
Parental Aspirations of Education	-0.07*	0.03	0.01
	(0.03)	(0.02)	(0.02)
Parental Expectations of Skills	0.12**	0.10***	0.08***
	(0.04)	(0.02)	(0.02)
Socioeconomic Status	0.51***	0.37***	0.34***
	(0.04)	(0.02)	(0.02)
Race/Ethnicity			
White	0.20	-0.02	0.15
	(0.15)	(0.09)	(0.08)
Black	1.15***	0.17	0.12
	(0.22)	(0.12)	(0.11)
Asian	0.22*	0.53***	0.68***
	(0.11)	(0.06)	(0.06)
Other Race/Ethnicity	0.11	0.26	0.16
	(0.33)	(0.19)	(0.17)
Age at first assessment	0.21***	0.21***	0.27***
	(0.04)	(0.02)	(0.02)
Female	0.04	0.05	-0.00
	(0.07)	(0.04)	(0.04)
Observations	2016	1966	1962
R_2	0.15	0.31	0.37

Note. Reference group is Hispanic. Standardized coefficients.
Standard errors in parentheses.
*p<0.05, **p<0.01, ***p<0.001

Research question 9: Finally, do these unique contributions (of family literacy practices and parental expectations) persist through the end of kindergarten?

To check for robustness, change models were estimated for spring of kindergarten oral language, early literacy skills, and early numeracy skills. If the predictors have long-term effects, then they would be predictive of these three outcomes. Table 9 displays the results from the regression analyses predicting kindergarteners' change in early skills with three key predictors: family literacy practices, parental expectations of educational attainment, and parental expectations of children's skills at the start of kindergarten. Family literacy practices significantly predicted only early literacy skills ($\beta = 0.04$, $p < 0.01$) at the end of kindergarten. Parental expectations of educational attainment and parental expectations of skills did not significantly predict early skills at the end of kindergarten.

Interestingly, the impact of SES on oral language and early numeracy skills faded. SES was positively associated with early literacy skills ($\beta = 0.05$, $p < 0.01$). Being White is positively associated with oral language ($\beta = 0.27$, $p < 0.05$) when compared to being Hispanic. Being Asian is positively associated with oral language ($\beta = 0.23$, $p < 0.01$), early literacy skills ($\beta = 0.20$, $p < 0.001$) when compared to being Hispanic. Finally, age was negatively associated with oral language ($\beta = -0.09$, $p < 0.01$).

All in all, it was the kindergarten test scores in the fall, prior achievement, that most significantly predicted kindergarten test scores in the spring: for oral language ($\beta = 0.73$, $p < 0.001$); for early literacy skills ($\beta = 0.75$, $p < 0.001$); and for early numeracy skills ($\beta = 0.78$, $p < 0.001$). Indeed, school entry skills explained the most variance in children's outcomes at the end of kindergarten beyond SES.

Table 9.

Regression Models Estimating Spring of Kindergarten Outcomes

	Oral Language	Literacy	Numeracy
Fall of Kindergarten Scores	0.73***	0.75***	0.78***
	(0.02)	(0.02)	(0.02)
Family Literacy Practices	0.00	0.04**	0.01
	(0.03)	(0.01)	(0.01)
Parental Aspirations of Education	0.02	0.00	0.02
	(0.03)	(0.01)	(0.01)
Parental Expectations of Skills	0.03	0.02	0.01
	(0.03)	(0.02)	(0.02)
Socioeconomic Status	0.04	0.05**	0.02
	(0.04)	(0.02)	(0.02)
Race/Ethnicity			
White	0.27*	0.11	-0.02
	(0.12)	(0.06)	(0.06)
Black	0.35	0.06	0.05
	(0.18)	(0.09)	(0.09)
Asian	0.23**	0.20***	0.08
	(0.09)	(0.04)	(0.05)
Other Race/Ethnicity	0.44	-0.09	-0.08
	(0.26)	(0.13)	(0.13)
Age at first assessment	-0.09**	0.01	0.01
	(0.03)	(0.01)	(0.02)
Female	-0.02	0.06*	-0.05
	(0.06)	(0.03)	(0.03)
Observations	1965	1917	1908
R_2	0.52	0.68	0.66

Note. Reference group is Hispanic. Standardized coefficients. Standard errors in parentheses.

*p<0.05, **p<0.01, ***p<0.001

Chapter 5: Discussion

The goal of this dissertation is to develop a rich understanding of bilingual children and families and their home experiences before entering kindergarten. Further, this dissertation seeks to understand the connection between family literacy practices and bilingual children's early skills: oral language, reading, and numeracy. Four major foci were considered: (1) background characteristics of bilingual families, (2) family literacy practices, (3) parental aspirations of children's educational attainment and parental expectations of children's skills at the start of kindergarten, and (4) their unique contributions to early skills. Findings regarding these four major foci are important for educators, researchers, and policymakers whose work centers on better understanding and supporting bilingual students and by extension their families to navigate the US school system.

Background Characteristics of Bilingual Families

Bilingual families included everyone who used two or more languages at home. Often in the US context, bilingual is misconceived as "language minority" and "English learner" which is when an individual primarily speaks a language that is not the language of the society at large. A language minority student must navigate spaces where their home language is not privileged by the society in which they live. In contrast, language majority refers to individuals who utilize use the dominant societal language as their primary language in addition to a secondary language. For the analyses of this dissertation, the bilingual families and their children were both language minorities and language majorities, although there was a much larger proportion who belonged to the former rather than the later. Nonetheless, it is important to include both groups in order to truly document the experiences of bilingual families in the US. Further, because so much of the literature focuses on language minorities, which is essential to do, whose status is confounded

with poverty, many findings often reaffirm a deficit narrative regarding bilinguals and their early skills (Hoff, 2013). In recognizing that bilingualism exists on a wide spectrum and thus by including every kind of bilingual, the findings of this dissertation illustrate the diversity of bilingual families.

First, 81 percent of the 2396 bilingual families had two-parent households. This is important for educators to know so that they may engage with both parents, rather than putting the onus on mothers, in building bridges between school and home learning experiences. Large-scale quantitative studies examining both maternal and paternal involvement with family literacy practices revealed that indeed both mothers and fathers uniquely contribute to their young children's early skills (Pancsofar, Vernon-Feagans, & The Family Life Project Investigators, 2010; Sims & Coley, 2015).

Next, the overwhelming majority (78%) of bilingual families reported being Hispanic. Next, there were 12% who reported being Asian; 6% White; 3% Black; and 1% another ethnicity. Thus, it is not surprising that much of the literature on bilinguals has focused on Spanish speakers. Nonetheless, there is much linguistic diversity among bilinguals that merits more in-depth research in order to design bilingual education programs and supports for linguistically diverse students.

Most significantly, many bilingual families are disproportionately dealing with poverty or low income. Research has shown that poverty and low-SES have detrimental effects on development of early academic skills. Low-SES families will have less print resources available in their homes. Bilingual parents had wide variations for household income which is connected to their levels of education and occupational prestige. On average the bilingual family had relatively low-SES, which was connected to print and literacy resources in the home. However,

print resources did not determine the frequency of family literacy practices nor parental expectations.

Family Literacy Practices

Family literacy practices, as used in this dissertation, refers to the practices that parents and children engage in their homes and places emphasis on the individuals – bilingual families – involved in such practices. Literacy exists on a spectrum and is socially- and politically-constructed (Auerbach, 1989). Practices include: (1) parent reads books to child, (2) parent reads books to child in home language, (3) parent tells stories to child, (4) parent sings songs to child, (5) child looks at picture books, (6) child reads or pretends to read books, (7) parent talks about nature and science with child, (8) parent and child play games and puzzles, (9) parent and child do arts and crafts, and (10) parent and child practice reading/working with numbers. These practices are those that have been widely accepted for fostering children's early academic skills: oral language, literacy, and numeracy (e.g. Aikens & Barbarin, 2008; Hoff, Laursen, Tardif, & Bornstein, 2002; Weigel, Martin, & Bennett, 2006).

Literacy or print resources, although widely varying in number, were not scarce in bilingual homes. Studies have shown that print resources are associated with children's oral language and literacy development. There was no indication of a preferred number of books to have in the home; the average was 34 books and the median was 20 books. Bilingual families had various numbers of books at home and some have almost 100 or more. Furthermore, many homes had books in their primary languages. In fact, 424 homes had the same number of books in both languages. This finding suggests that bilingual education might be useful for many families who engage in multiple languages at home.

Further, bilingual parents and children frequently engage in literacy practices at home. A majority of parents use their home languages during these practices. For instance, parents read in the home languages twice a week to their children. Parents were spending on average twenty minutes for each reading session. Forty-four percent of parents reported always using their home languages for family literacy practices and only 2% reported never using their home languages for family literacy practices. This presents two implications related to public schools. Firstly, there may be a misalignment between reading in the home languages and English language and literacy test measures. Parents and children are engaging in literacy activities in their home languages, but these activities may not be aptly reflected in English language oriented curricula at school. Secondly, the misconception that bilingual children and their parents lack print exposure or oral language has been disentangled by this finding of these rich and diverse literacy experiences in bilingual homes.

Parental Expectations

Another important finding is that while bilingual parents hold high expectations (e.g. educational degree aspirations and skills by kindergarten) for their children, these expectations were not necessarily influential to children's early skills (Coll, Akiba, Palacios, Bailey, Silver, DiMartino, & Chin, 2002). While much research has found that parental expectations matter, other research has also found this discrepancy between parental expectations and children's achievement. Parental expectations have been conceptualized in two dimensions: activities (active) or aspirations (passive). Parental expectations that center on home-based activities or school-based activities may have a stronger influence on how children perform in school. Parental expectations that center on aspirations or beliefs may influence how children perform through other mechanisms such as family literacy practices. Prior research by Goldenberg et al.

(2001) found that parental expectations did not influence children's performance whereas research by Aunola et al. (2002) and Georgiou et al. (2013) found that parental expectations predicted children's task focus which led to increased reading skills.

Unique Contributions of Family Literacy Practices & Parental Expectations in Spring

Indeed, regression analyses showed that family literacy practices predicted oral language, early literacy skills, and early numeracy skills of bilingual kindergarteners. This finding aligns with the literature on home learning environments and the home literacy model. It is consistent with other large, quantitative studies (e.g. Baker, 2013; Bodovski & Farkas, 2008; Cheadle, 2008; Durand, 2011). Early literacy skills include language, oral, and listening skills, and perhaps such skills may be scaffolded by parents. It could also be that children develop their reading skills through interactions with parents and caretakers who have more sophisticated language and literacy skills. This dissertation also extended upon previous research on storybook reading including more oral language interactions between parent and child (Sénéchal & LeFevre, 2002). Such oral language interactions include singing songs and talking about nature and science. It might be that parents who engage in more language-rich interactions with their young children will positively stimulate their children's reading development during these early years.

Furthermore, family literacy practices also predicted early numeracy skills. This finding is consistent with research on home numeracy environment and academic skills (e.g. Manolitsis, et al., 2013; Melhuish, et al., 2008; Yan & Lin, 2005). Early math skills require working memory, attention, and logic, all of which parents foster during home learning activities such as practicing with numbers and talking about nature and science.

By the end of kindergarten, family literacy practices significantly predicted only reading skills. This suggests that the learning experiences that parents provide for their children in home may carry out into the early elementary school years. Some studies have found a persistent effect of home literacy practices. However, neither types of parental expectations significantly predicted any of the three early academic skills. Furthermore, the effect of SES diminished for oral language and early math skills, but it continued to significantly, but small, predicted early reading skills. How children performed right at the start of kindergarten captured the majority of the variance for their end of kindergarten performance.

Overall, these findings suggest that the learning that occurs in schools determines the later trajectories of bilingual children. Prior reading and math scores explain most of the variance rather than parenting or SES. It is fair to suggest that while parents may shape their children's early skills, it is the schools' responsibility to maintain and sustain children's reading and numeracy development.

Limitations and Future Directions

When interpreting the results of this study, some limitations should be kept in mind. It has the strengths and limitations associated with the ECLSK. This study is not experimental, and so causal claims regarding the effects of family literacy practices and parental expectations on bilingual children's early skills are not warranted. Family literacy practices were parent-reported rather than observations of the quality of these interactions. Additionally, these practices did not explicitly include deliberately teaching letters and words to children, which research has shown is influential for later reading development (Senechal & Lefevre, 2002). Measures of parental expectations of their children's skills by kindergarten were also parent-reported, which brings about a host of concerns regarding stereotypes and biases. Despite these limitations,

socioeconomic status and child characteristics were controlled and strict methods for missing data were employed in order to produce estimates as free from bias as possible. Latent variables for literacy practices and parental expectations of child's skills by kindergarten were attempts to control any noise from the individual variables.

More work is needed to fully understand the influence of family literacy practices and parental expectations for bilingual students. Future studies could look at different measurement scales for parent reports of these constructs. Also, future studies should examine the directions of the relations among key predictors. Observations and case studies of bilingual families whose home learning experiences occur in various primary languages, such as Spanish, Chinese Mandarin, Tagalog, or Vietnamese, are necessary future research trajectories. Even though many variables comprised the family literacy practices variable, they do not truly capture what parents and children engage in before formal schooling; future studies could employ both qualitative and quantitative methods for studying the mechanisms that underlie the relationships among family literacy practices, parental expectations, and children's early skills. Data from the present dissertation provide some evidence that parents contribute to the development of these critical skills prior to kindergarten and also highlight the potential of parents from diverse socioeconomic backgrounds to positively contribute to reading and numeracy development above and beyond the contribution of contextual risks (e.g., poverty).

Conclusion

Because bilingual children learn about reading before they start formal schooling, family literacy practices have implications for their experiences with school-based learning. Parents have an integral role in fostering and promoting children's oral language, literacy, and numeracy skills. The findings of this dissertation suggest that parents may play a role beyond SES by

engaging in numeracy- and literacy-rich activities and setting high expectations for their children. Furthermore, this dissertation challenges the widely believed notion that bilingual families are deficient in home literacy practices and aspirations.

Finally, the challenge for US schools is to create learning environments that involve the learning that children already do in their everyday lives. The different literacy and numeracy concepts needed for school-based learning are occurring in bilingual homes. Researchers have suggested that bilingual education, when carefully crafted, may be one pathway for linguistically diverse students to learn and grow. While the current dissertation has provided us an overview of the literacy practices and expectations among bilingual families, the bilingual education research field has much to gain from further explorations. In particular, we need to reflect on the layers of other contextual aspects wherein these families live, such as neighborhood in addition to school climate as well as other means for support. Research efforts to truly understand the rich learning that occurs in bilingual homes will facilitate our understanding of the developmental pathways of bilingual children. And then, we may address how to create standards and curriculum for bilingual education that truly fosters bilingualism for students.

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